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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,010	06/04/2001	Francis A.L. Dullien	612.34893VV3	5301
20457	7590	01/16/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP			BUSHEY, CHARLES S	
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SUITE 1800			ART UNIT	
ARLINGTON, VA 22209-9889			PAPER NUMBER	
			1724	

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/872,010  
Filing Date: June 04, 2001  
Appellants: DULLIEN ET AL.

\_\_\_\_\_  
Alan E. Schiavelli  
For Appellant

**MAILED**  
JAN 15 2004  
**GROUP 1700**

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed November 18, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1-4, 7-10, and 13-23 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

Art Unit: 1724

3,487,610	BROWN et al	1-1970
3,545,178	SHEEHAN	12-1970
3,808,776	JESERNIG et al	5-1974
3,938,971	McCLURE	2-1976
3,955,947	HOON et al	5-1976
4,289,630	SCHMIDT, Jr. et al	9-1981

**(10) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

Claims 1, 2, 4, 7, 9, 10, 13, 14, 16-18, 20, and 21 stand rejected under 35 U.S.C. 102(b) as being clearly anticipated by Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128).

It is noted that at least with respect to appealed apparatus claims 1, 2, 4, 7, 9, 10, 18, 20, and 21, a recitation that the fluid stream passes therethrough in turbulent flow is irrelevant. As stated previously by the Court, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Clearly, in view of the discussion throughout the reference, the apparatus taught thereby is absolutely capable of performing separation of dusts from a stream in turbulent flow. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claims 15 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses appellant's invention as recited by appealed claims 15 and 19, except for the recitation that the porous fibrous material of the collection elements has a porosity of 90% to 99.9%. Wherein the reference clearly teaches utilizing porous fibrous mats or pads on all surfaces of the flow channels through the device, to provide collection of particles from the fluid stream in the same manner as appellant, i.e., by vortical deposition of particles within the stagnant spaces provided by the pads, it would have been obvious for an artisan at the time of the invention, to arrive at optimal workable porosity levels of the pads of the reference by way of routine experimentation, appellant's desired porosity levels being an obvious result of that routine experimentation.

Claims 3 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360 taken together with Brown et al.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses appellant's invention as recited by appealed claims 3 and 22, except for the recitation that the elements are electrostatically charged.

Brown et al (Figs. 3-6; col. 6, lines 23-33) disclose an apparatus for removing particles from a fluid stream similar to that of the British reference, but wherein the elements which define the unobstructed flow channels are electrostatically charged in order that the separation efficiency of the apparatus would be greatly increased. It would have been obvious for an artisan at the time of the invention, to provide the filtration elements of the British reference with static

Art Unit: 1724

charges, in view of Brown et al, since such would expectedly increase the particle collection efficiency of the apparatus as suggested by the British reference.

Claims 8 and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Britain 632,360 taken together with any one of Sheehan, Jesernig et al, McClure, Hoon et al, and Schmidt, Jr. et al.

Britain 632,360 (Figs. 1-5; page 1, lines 57-66, 80-87; page 2, lines 37-41; page 3, lines 16-45, 68-87; page 5, lines 77-86, 122-128) substantially discloses appellant's invention as recited by appealed claims 8 and 23, except for the recitation that the elements are shaken or moved to facilitate particle removal from the surfaces thereof.

Sheehan, Jesernig et al, McClure, Hoon et al, and Schmidt, Jr. et al (See the Abstract of each secondary reference) each disclose vertically oriented tubular particle elimination elements that are provided with shaker means for periodically shaking the filter elements to remove collected particles therefrom. Wherein it is notoriously well known within the art of air filtration to periodically renew the filter surface by removing a collected layer of particles by vibrating the filter surface with a shaker mechanism, it would have been obvious for an artisan at the time of the invention, to provide the apparatus as taught by British reference 632,360, with shaker means, in view of any one of the alternative secondary references, since such would increase the filtration efficiency of the British reference in a well known manner by eliminating the need to shut down the apparatus for regular cleaning of the filter elements thereof.

**(11) Response to Argument**

Appellant's arguments have been fully considered but they are not persuasive.

With respect to the argument that the British reference cannot anticipate the claimed invention because, in appellant's view it does not teach turbulent flow of the fluid stream and according to appellant it allegedly teaches away from turbulent flow, such is not found to be persuasive. Appellant cites page 1, lines 31-36 and page 3, lines 24-33 as evidence that the reference teaches away from using turbulent flow within the device. Such could not be further from the truth.

The British reference teaches throughout that turbulent flow of the fluid stream through the device is the reason the device is capable of separating solid particles from the fluid stream. In fact the two portions of the reference cited by appellant simply emphasize that the turbulence need only be minimal. *Minimal turbulence is still turbulence in the mind of the Examiner.* Please note lines 37-40 on page 1 of the reference, wherein it is stated "that even a small component of velocity at right angles to the general flow will suffice to bring a dust particle into contact with the wool." A fluid flow having a component of velocity at right angles to the general flow is in turbulence. Fluid flow is either laminar, i.e., entirely aligned with the general flow direction of the fluid, or turbulent, i.e., flow that while it may include portions that are aligned with the general flow, it also must include portions or a component of velocity at right angles to the general flow, as result from the formation of eddies within a fluid stream. Appellant is invited to revisit the portions of the reference specifically cited by the Examiner in the rejection statements set forth above, which emphasize the existence and necessity of turbulent flow within the British device to provide the desired separation.

Within the response submitted December 17, 2002, as well as the Request for Reconsideration After Final Rejection filed May 17, 2002, appellant has taken and expanded

Art Unit: 1724

upon the position that even though the British reference clearly utilizes eddy flow and stream flow vortices within the fibrous material lined channels to remove particles from the flow streams, such does not amount to turbulent flow within the reference. Appellant therefore concludes that the reference cannot anticipate the instant claims. Appellant bases this line of argument on various definitions of turbulent flow that are allegedly not envisaged by the British reference. Specifically, appellant's arguments are based upon a given textbook definition of "turbulence", which is not commensurate in scope with that as set forth by the instant application. The application only requires that the turbulent flow within the claimed device include "eddies" or "vortices". There is no mention or suggestion within the instant application that the so-called turbulent flow include eddy patterns which are complex and flow quantities which fluctuate randomly in time and space. Since the British reference clearly teaches fluid flow through the reference device, which includes eddies or vortex flow, the reference meets appellant's definition of turbulent flow as set forth by appellant in the instant specification and therefore the reference does meet the instant claims with respect to the type of turbulent flow therethrough.

With respect to the multiple pages of textbook discussion of turbulent or vortex flow attached to the communication filed December 17, 2002, such are no more persuasive than the earlier filed textbook definitions of turbulence. As discussed above, all of the textbook pages filed appear to go far beyond that which was intended or provided within the originally filed disclosure relative to the definition of turbulent flow.

With respect to the reference combination applied to claims 3 and 22, which require the fibrous material to have a static charge, the Brown et al reference has been applied to



Art Unit: 1724

demonstrate the well known use of static electricity on fluid filtration elements to increase their collection capability using a smaller filter surface area than would be required without the static charges on the filter surfaces. Brown et al in no way teaches away from providing a charge to a fibrous filter surface. In fact, one having ordinary skill in the art would expect that providing a fibrous element with a static charge in the manner as suggested by Brown et al would further reduce the required surface area of the element over either an uncharged element of fibrous or non-fibrous construction.

With respect to the alternative secondary references as applied to appealed claims 8 and 23, appellant has only argued that they do not remedy the deficiencies of the British reference, which allegations of deficiencies have been shown to be incorrect.

Lastly, it is noted, as stated in the rejection statements above, at least with respect to appealed apparatus claims 1-4, 7-10, and 18-23, a recitation by the apparatus claim that the fluid stream passes therethrough in turbulent flow is irrelevant. As stated previously by the Court, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

For the above reasons, it is believed that the rejections should be sustained.

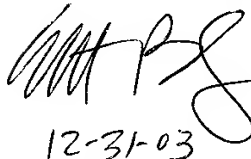
Application/Control Number: 09/872,010

Art Unit: 1724

Page 9

Respectfully submitted,

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Primary Examiner  
Art Unit 1724





12-31-03

csb

December 31, 2003

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